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AUTHOR Potter, Laurie S.; Potter, George T.
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ABSTRACT

An account of the Ramapo College (New Jersey) experience in the design and development of a barrier-free campus includes discussion of the academic and service problems that arise in meeting the needs of handicapped students in college. Special attention is given to: campus bathrooms, campus housing (ramps, locks, bathrooms, roommate selection, emergency situations, snow and ice, food services, social events and off-campus socializing, nonresidents, elevators, and fire precautions), academic and support services (intake of handicapped students, testing, course loads, sensitivity to special emotional needs, and nonexploitation), counseling, job placement and graduate schools, and costs. (MSE)

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DESIGNING AND OPERATING

A

BARRIER FREE CAMPUS

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Laurie S. Potter
and
George T. Potter
Ramapo College of New Jersey

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A paper prepared for presentation to the Eleventh Annual Conference of the Society for College and University Planning, July 21-24, 1976.

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Our purpose in this paper is to present an account of the design and development of a barrier-free campus, and to discuss the academic and service problems that arise in meeting the needs of handicapped students in college. We trust that the lessons of our experience will be helpful to other college administrations planning programs for handicapped students, either in response to new legislation establishing the rights of handicapped students for access to higher education, or in search of new categories of students to serve in a time of diminishing numbers of new high school graduates. We believe that our comments are especially timely as Section 504 of the Rehabilitation Act, which prohibits discrimination against the handicapped, comes into force, and we hope that it will be helpful to other institutions as they attempt, in the words of the Office for Civil Rights Director Martin Gerry, to "strike a balance" between the needs of handicapped students and the costs of meeting those needs.

Ramapo College is a new college within the State System of Higher Education in New Jersey. The College was founded in 1968 as a response to long-felt needs for additional State College places in New Jersey, and we began planning activities in 1969. Our first major problem was to find a site for the College within Bergen County, which is located in the North East Part of the State, just across the river from New York City. It is a heavily populated area, divided up into many small communities with long traditions of local independence, and including many suburban areas with zoning restrictions that discourage new development. In this situation, and with memories of college and university student demonstrations uppermost in the public mind at that time, we experienced more than usual difficulty in locating our site. The fact that we would be taking the property off the local tax rolls didn't help us either. Although everyone thought it was a good idea to found a new college, everybody found reasons why we should find a location just down the road rather than within their own municipal boundaries.

For these reasons we must acknowledge that the problems of developing a barrier-free campus were far from our minds as we completed the process of site

selection. Our final choice settled on 300 acres of property within an estate up in the Township of Mahwah, just East of the Ramapo Mountains. It is a beautiful campus with a man-made lake, shade trees, and professionally landscaped groves - almost a Hollywood setting for the ideal college - except that the rolling hills represented a built-in problem for future students attempting to move around the campus in their wheelchairs.

Final approval of the Mahwah site as the future home for the College was obtained in July, 1970. We were thus able to turn our attention to other important matters, including the need to make appropriate provision for physically handicapped students in our facilities. At that point in time, we received offers of assistance from Richard J. Cummins, who was the President of the Easter Seal Society for Crippled Children and Adults of New Jersey, and with his help we made rapid progression bringing information about this matter to the attention of our architects, John Zvosec of Princeton, and Ken DeMay of Watertown, Massachusetts. The architects were of course generally familiar with the problems involved in making colleges and universities accessible to handicapped students, but our determination to ensure the development of a barrier-free campus represented an additional factor for them to take into account as they went into design development. Special reference should also be made to the work of our colleague, Raymond Pennotti, our Director of Campus Development at Ramapo, and John Whitlock, from the New Jersey Department of Higher Education, who have helped to overcome the problems that we faced along the way.

One especially memorable event that took place during this design period back in 1970 was a meeting with a group of handicapped college graduates that was arranged by the Easter Seal Society. A review of their experiences - both good and bad - as students at other colleges and universities was very helpful in raising our level of consciousness about the needs of handicapped students on campus.

Just as we were paying attention to these problems in our design activities, so also was the State Legislature moving ahead with the enactment of rules and regulations based on specifications adopted by the American Standards Association in October, 1961. These rules and regulations, were eventually approved by the Legislature and by the Governor at various dates in 1971. Under the new laws all instrumentalities of the State were required to include facilities for the physically handicapped in all plans and specifications for public work.

The new laws, and the standard specifications upon which they were based, were helpful in many respects. They helped to define the various categories of disabilities facing the handicapped, (non-ambulatory disabilities, semi-ambulatory disabilities, sight disabilities, learning disabilities, disabilities of incoordination, and aging), and they established the following minimum expectations of services to be provided in all newly constructed public buildings:

a. At least one principal entrance to the building with ramp access;

b. On each floor occupied by students at least one watercloset stall, for each sex, in general public toilet rooms, to accommodate wheelchair students which shall include adequate stall-door width, grab rails, sufficient space and appropriate height;

c. A drinking fountain of suitable height and extension, for wheelchair students on every floor used for public occupancy;

d. In any multistory building an elevator, sufficient in size to accommodate a wheelchair;

e. In all laboratory and shop facilities at least one working area dimensioned to permit use by physically-handicapped students;

f. One public telephone at a height accessible to wheelchair occupants.

Thus, as we completed our design work and moved ahead with construction, the commitment to the development of a barrier-free campus was reinforced, and we began the recruitment of handicapped students. We were due to admit our first students to the College in September, 1971 and our new catalogue that was published as we came into operation proudly announced that, "The campus and academic buildings at Ramapo are designed to accommodate students with physical handicaps. Special parking areas, ramps, elevators, handrail and other specifications have been provided to meet their needs."

We went along for a few years content with the achievement of barrier-free design on our campus. We had made a campus accessible and we cared about handicapped students as individuals. The press coverage lauded the College and handicapped students began to enroll. The students seemed pleased with the buildings and the beautiful site. Signs of unhappiness with rough terrain, lack of enough parking, bathrooms with stalls that were smaller than they should have been began to emerge as people used the campus. Memos went between the College and the architects citing various inadequacies. These memos highlighted problems of the following kind.

Bathroom

Bathroom humor has a special meaning for handicapped students. Unfortunately, however, the joke is sometimes on the student, and we have to acknowledge that there were design deficiencies in our first phase buildings as far as this need is concerned. The public toilet rooms in those original buildings were just not wide enough to provide easy access for students in wheelchairs, and the fixtures were inadequate. So we had to resort to the compromise solution of equipping a special toilet stall in our campus health office area to meet the needs of these students.

We have improved the situation in later buildings, and we now feel that we can meet the needs of almost all of our students confined to wheelchairs. Perhaps the provision made in our Physical Education Building is our best example of what should be done in well equipped toilet rooms today. The entrance doors are wide enough for easy access in a wheelchair. The space within the room allows room to maneuver the wheelchair. The facilities in the specially equipped stall, (furthest from the room entrance), are at the best height, (18" to 20" from the floor), for use by the handicapped student.

So our most urgent needs have at last been met in almost all of our facilities. We must confess, however, that one facility - the house of the first family on campus - is still not properly equipped. This fine, Dutch colonial home is still inaccessible to students in wheelchairs. Even if they can manage to negotiate the steps outside our door, we are still unable to provide them with properly equipped bathroom facilities in the house. So we cannot entertain them at home. We have designed the remedy to this problem, but so far we lack the funds needed to make the changes that are required.

Campus Housing

We knew that a small percentage of handicapped students would want to live on campus, so in the first housing units opened in 1972, two two-bedroom apartments for the handicapped were included. These apartments were on the ground floor, with a ramped entrance. The apartment itself was modified in several ways. The stove had controls in the front rather than the rear, so a wheelchair student would not have to reach across open gas jets. The storage area under the kitchen sink was eliminated to permit a wheelchair to fit under. Wall switches and coat racks were lowered. A visual signal accompanies the fire alarm. The bathroom was made to accommodate a wheelchair and had grab

rails near the toilet and tub-shower. The sinks were lowered and cut. The doorways are wider and each room took the turning radius of the wheelchair into consideration.

The same architectural design features were incorporated in the second group of buildings opened in 1974. There are four, two-bedroom apartments in this second phase. Some inadequacies were discovered here.

I. Ramps

A big mistake in our post-housing was that every apartment on the ground floor was not ramped. Regardless of whether it was intended for a handicapped student to live in or not, this feature would have permitted free access to visit able-bodied friends. In these units, the able-bodied must visit the wheelchair student. The reverse can happen only if the handicapped person can be lifted from the chair, or is fortunate enough to walk with crutches. When we built our second phase housing, we corrected this inadequacy.

There were other design features which created problems for our students.

II. Locks

The locks on the door required more physical force than many of our students had. Our quadriplegics couldn't deal with them at all and required assistance to enter their apartments. Locks generally required a two-handed operation - one to insert the key and the other to turn a door knob. Locks were changed to make it a single-handed operation.

We explored push button combination locks, but found that only one in four of our quadriplegic students could operate them. The trial lock

was returned and we continue to use a key lock.

III. Bathroom

Students have requested that shower stalls be created, so they could wheel a wet-chair or old chair into the shower, wash and go out again. Generally the paraplegic would be able to benefit from this shower and if we build more housing, it will be included.

IV. Roommate

A handicapped student usually rooms with an able-bodied student unless two handicapped students are able to care for themselves. We used to assign able-bodied and handicapped students to rooms at random. Some of the able-bodied students were extremely distressed to find out that they had to room with a handicapped student. Architectural barriers being removed doesn't eradicate prejudice from people's minds. The able-bodied students generally have had little opportunity to interact with handicapped people. The able-bodied student looked forward to being a free agent, away from home and parental restraints. When they saw what they regarded as a burden, some students refused to accept the handicapped student. This obviously created stress on all sides. Now we inform all potential resident students that they may have a roommate who is handicapped. This allows them time to indicate any difficulty with that possibility.

Initially, Security Men were used to help handicapped students get ready for class. One new man refused to do this because it was not part of his job description. This meant that a new tack had to be taken. In recent years the New Jersey Division of Vocational Rehabilitation has paid for an attendant for one of our quadriplegic students. This arrangement has worked well because the student is screened for interest and ability to cope with the handicapped.

V. Emergency Situations

In the event of an emergency, our local Security is contacted. They in turn can mobilize a volunteer ambulance team or take a student to our local hospital, (10 minutes away from the campus). We have a nurse on duty everyday and in the evenings from 3 PM to 8 PM and a physician on campus two days a week.

VI. Snow and Ice

We have about five minor snow falls each year and about as many treacherous icy days. Maintenance does plow and sand the walkways, but on occasion they are slow to get to the job. One student called our home complaining that the snow from the plow had left a ridge right at the foot of his ramp and he couldn't leave his apartment to attend class. Maintenance people must be sensitized to the special needs of our students.

We encourage the students to put wide treaded tires on their wheelchairs to help avert some problems.

One of our students is on crutches and he finds the ice a particular problem on some of the sloping paths.

VII. Food

Food is an area of concern on campus. Students cook for themselves or form groups which rotate the responsibility. There is always a fear that the staple diet is potato chips, beer and coke. The details of purchase and cooking are worked out by the individual student. There is a student cooperative which sells fresh fruit and vegetables, rice, flour, and eggs right on campus, so there is no need to drive to the local supermarket, (five miles away).

We have a food service on campus which provides breakfast and a hot or cold lunch. The Pub opens around 2:30 PM, and it sells hamburgers, pizza and other small items, along with beer and wine.

We are not convinced that our students eat well, but it is difficult to monitor.

VIII. Social

There are 600 hundred residents out of a school population of 3,800. There is a feeling of community within the residents. There are barriers to free interaction, however. The lack of ramps was mentioned. Another problem is the style of housing. With apartments as the residence, large common meeting rooms are precluded. Money ran out before a meeting or recreational hall could be erected. Therefore, the apartment dweller must rely on the main campus, 300-400 yards away. Not a large distance, to be sure, but nevertheless, a distance to be dealt with. The facilities on the main campus include: (1) a Student Life Building with a game room, cafeteria, bookstore, and radio station; (2) Physical Education Building with exercise equipment for handicapped, a pool with a lift and a large gymnasium; (3) Auditorium, where plays, concerts, and lectures take place; and (4) Pub - for evening and weekend food, drink, and entertainment.

There are many events on campus, but sometimes handicapped students would like to get away for a change of scene. We don't have a van with a hydraulic lift to take a group to the City or to our neighboring barrier-free town of Ridgewood. We hope for this in the near future. Some of our handicapped students drive. Two have vans which they use to get into the wider world. Students are sometimes forced to remain on campus because they can't get a ride home for a weekend.

IX. Non-residents

Most of our handicapped students live off campus. They either drive their own vehicle or are brought to and from the campus. There is no adequate public transportation available for the handicapped. When any handicapped person arrives on campus, he/she is directed to one of three parking lots especially designated for the handicapped. Visitors and temporarily handicapped persons are issued a parking permit. Those who come to the parking lot daily are given special decals to put on their car windows. We have student attendants at the parking lots to assist the handicapped in and out of their vehicles. An electronic call system is also available for students who need help from our Security Office when they arrive by car.

Our biggest problem with the parking areas is keeping able-bodied people out of them. We tow cars away, if they are parked in the wrong place, but constant vigilance is the only way to eliminate the problem.

X. Elevators

The standards introduced by the 1971 legislation stipulated that there must be at least one elevator in each multi-story public building and that it should be sufficient in size to accommodate a wheelchair. Our response to this standard in our original buildings was to install two elevators that are 6'1" wide and 3'8" deep. Although we provided a 3'0" door to the elevators, it was not until the units were in use that we realized that they were in fact too small for easy use by students in wheelchairs. More recent standards indicate more clearly that the minimum cab size should be 5'6" wide and 5'1" deep to ensure turning space of sufficient size to accommodate a wheelchair. In the meantime, the specifications describing the length of wheelchairs have been increased from 42 inches to 49 inches. When we built our Science Building, which is a four-story building, we were determined not to repeat our earlier

mistakes. So the cab there is 8'0" wide and 6'2" deep, with a door that is 4'0" wide.

We also discovered that size is not the only problem to overcome in providing elevators on a barrier-free campus. In order to limit wider public use of the original elevators, we provided key operated call buttons. Then we were told that some students in wheelchairs lacked the manual dexterity to manipulate the keys. Once inside the cab, some students had additional difficulty operating recessed controls, so we installed raised controls in the science building elevator. We have also decided to include braille identification markings on all future elevator installations.

Next, to continue this sorrowful episode, imagine that you are in this cramped elevator cab, when it comes to an abrupt stop between floors. Even if there was a telephone in the cab, you could not reach it from the wheelchair, so you have to wait for help - hoping that it will not be too long before someone notes your absence and looks around for you. This has happened at Ramapo, so we have installed an electronic voice system, providing a direct radio link to our Security Office, as a solution to the problem.

XI. Fire Precautions

Speaking of an alarm system, what do you do if you are in a wheelchair on the fourth floor of the Science Building, when the fire alarm sounds off? Standard practice demands that the elevators go out of use in a fire emergency, so you are stranded. In response to this problem we have organized a team of fire marshalls to assist wheelchair students at times of such emergencies. So you make your way to the nearest fire protected stairway and wait for help. It is not the best solution, maybe,

but if you are a handicapped student, it is better than confining your interest to courses taught on the first and second floors.

By way of further comment about fire precautions, we must note, in passing, that the fire alarms in our first buildings were placed too high, (5'3"), to be reached by students in wheelchairs. They are installed at a more reasonable height, (4'0"), in later buildings. Thus far we have not added visual indicators to give the alarm to hearing-impaired students. However, these will be installed in our new library building now under construction.

To close out this section, a comment on our alarm system and on fire drills must be added. The alarm system is sound-coded to indicate the source of the emergency. For five years we have tried to get people to learn the code, but to no avail. Even the Security Staff have problems with it. So, if the alarm sounds anywhere, we have to evacuate the entire building. Perhaps we should have saved some money in the original installation.

Fire drills are a problem on any campus, but they are an even greater concern when handicapped students are around. They feel especially helpless in the event of a fire emergency. We have devised special procedures to help them get out of the buildings quickly, but our fire drills are rarely effective. Either the alarm is ignored because it is "just another drill," or the fire marshalls do not report for service, or the handicapped student is not around that day. So we pray for no real emergency and we continue to work on improving our system so that tragedy may be averted if the real thing ever happens.

Academic and Support Services

In several years of experience with handicapped students on campus, we have become increasingly aware that it takes more than an absence of physical barriers to create an effective learning environment. Following from this realization that it would be essential to provide a variety of academic and support services, we designated a part time staff member to coordinate these services, and we formed a Committee on the Handicapped.

The Committee included representation from the Admissions Office, Dean of Students, Counseling Service, Campus Housing, The Learning Skills Center, two handicapped students and the Director of Campus Development.

As an initial task, the Committee examined every aspect of our facility and our service to the handicapped student. We found, as expected, that there were very few faults with the physical design of the campus. By and large, the campus could be negotiated by students in wheelchairs and crutches. The single blind student, a Korean War veteran, was able to move around freely. What we did have to face was our weakness in the area of services to the handicapped.

The first area of concern was the admission of handicapped students to the College. The Committee refined the catalogue statement to make it more precise and began to investigate intake procedures at other colleges and universities. We also interviewed freshman and senior students, other than those on the Committee, to learn of their experience during the intake procedure and subsequently as students here at Ramapo. As a result of these interviews, we decided to improve our services to handicapped students in the following ways:

I. Intake of Handicapped Students

A. In-depth interviews will be conducted with all students;

1. To ascertain psychological and communication difficulties

2. To discuss commuting or dorm life - pros and cons

3. To ascertain physical limitations.

B. Students will be invited to visit the campus prior to student commitment and orientation:

1. To meet handicapped and other students

2. To visit dorms

3. To ensure that they can move around the campus successfully.

C. High school record and samples of work will be examined:

1. Remedial help should be sought prior to admission.

D. Admissions will be controlled to prevent students with serious psychological or academic problems from entering. We must be aware of limitations that can be aided by volunteers and arrange for them in advance.

E. Educate referral agencies as to our standards.

II. Evaluation on Campus of Handicapped Student

A. All testing will be without time limits.

B. Special typewriter or tape recorder will be used to allow student to take the writing test on his/her own. People writing student's thoughts down often interpret rather than copy directly.

III. Handicapped Students on Campus

A. Will be allowed to take fewer credits per semester, even if it takes 5-7 years to complete degree requirements.

B. Students will be encouraged to work to capacity and to show competency. Academic expectations will be the same for all students at Ramapo.

C. In-house sensitivity sessions will be given to increase mutual sensitivity between handicapped students and the faculty. This session could be led by handicapped students.

D. Handicapped students will not be exploited for publicity purposes.

We asked the Director of our local division of vocational rehabilitation to visit with us, hoping to extend our effectiveness through this agency. This has proven to be a valuable resource for monies to pay resident assistants, to obtain counseling and also contact with Disabled In Action, (an assertive social group).

As a response to the need for additional services, the Committee wrote a proposal to the Department of Health, Education, and Welfare to establish an office which would serve the needs of the handicapped student. This office would coordinate counseling and academic services. It would also be aware of the need for sensitivity workshops to help able-bodied faculty and students interact successfully with the handicapped student. The proposal also asks for a bus with a hydraulic lift, which would enable our students to take advantage of cultural events in the area and in Manhattan. This office does not exist yet and in the meantime, its functions are still being carried on by the Committee. The three areas - Admissions, Academic Services, and Counseling - will be discussed now.

Admissions

The intake procedures are the same for every entering student. There is a question on the application which asks whether there is a handicapping condition.

When the student's records arrive, they are processed and if a student is accepted, he/she is asked to come to the College for an interview. An interview takes place with two people present. The interviewers note their findings on an

evaluation sheet after the student leaves. In the future, we will be sending out a questionnaire, (a modification of Dr. Theodore Childs' questionnaire, which he uses in his intake for Long Island University), before the student comes, so he/she can bring it to the interview. This new questionnaire asks personal questions regarding finances, health status, communication skills and educational goals.

Special students are also admitted. They may be part time because of an inability to tolerate a full program, because of less than acceptable previous academic achievement, or some other special need. These students generally matriculate after amassing sufficient credits to prove their capacity to handle studies on a college level.

Counseling

We had a counselor designated for handicapped students on a part time basis. However, he left to set up a private practice. He continues to see one of the students on this new basis. Due to budgetary constraints, we've been unable to bring in a person to replace him. This means the professional counseling staff of three, must attempt to meet the needs of all of our students. One of these people has a great interest in handicapped students, but obviously has little time to devote to them on an exclusive basis. Peer counseling is available. An emergency will be responded to on any level necessary. There is no question about the need to enhance this service to our handicapped students, and it is a top priority matter when monies and positions become available.

Academic Services

Entering students, including transfer students, are required to take proficiency examinations in reading, math, and written language.

Students with handicaps, who often require extended time, readers, writers, or typewriters, are tested separately from the group. They make special arrangements

with the Learning Center for an alternate time. We have had our secretary, a student aide, or a professor administer the tests. On one occasion we had the student's mother write for her. In a subsequent interview, the student stated that this made her very nervous because her mother was not writing exactly what she wanted. Now, no matter how eager or apparently able a parent is, we don't permit them to aid their child during the testing time.

All tutoring is arranged through the individual tutors or through me at the Learning Center. I am assigned on an adjunct level to work in any and all capacities with the handicapped students. This assignment ranges from membership on the Committee for the Handicapped, interviewing students, helping with fund raising, (a recent 24-hour Swim-a-thon, arranged with the help of a colleague and two students, raised over $2,000 for gym equipment for the handicapped), arranging speakers and testing of incoming students. The students who have been interviewed regarding academic services express little dissatisfaction. Their problems seem to arise after completing Learning Center courses when they are coping with complicated subject matter. A peer tutor was arranged for one young man who was studying Federal Income Tax laws in an advanced business course. Our experience indicates that both students profit from such interaction. Students also rely on peers to take duplicate notes in class with a piece of carbon paper under their own paper. The ingenuity and independence of our students is inspiring. We must persist, however, in being certain that we are giving them every opportunity to succeed.

One problem which comes to our attention on occasion is the difficulty faculty members experience when they have a handicapped student in their class. Students have expressed concern over what they consider to be grade inflation. They feel that some faculty members are afraid to place demands on them and treat them with "kid gloves." On the other hand, faculty sometimes feel manipulated by

handicapped students. They feel they must do more work if they have a handicapped student in class. The response for both is to have realistic expectations and to express them openly. The student who feels he's getting away with work would be wise to indicate his capabilities openly to a professor, thus helping the professor overcome his prejudices against handicapped students. The faculty member who feels manipulated needs to communicate this fact also. One student asked me to fill out his registration card and then asked me to take it to a secretary. Fortunately, he has a great sense of humor, so I told him he was just being lazy and he delivered it himself.

Most faculty are pleased to make arrangements for students to take exams at different times, to complete assignments if there has been illness. We have had only one deaf student taking one course. The teacher found it difficult to remember to face the class so he could lip read. She also felt, and rightly so, that he lost a great deal of content during class discussion. If we should ever expand the program for the deaf, we must have interpreters. The local division of vocational rehabilitation is investigating the number of deaf people with a thought of extending services to this population.

The Library offers such services as Talking Books, other tapes of a recreational nature come from our New Jersey State Library for the Blind and Handicapped. These tapes are used by our blind student, a partially sighted student, as well as quadraplegics who cannot hold a book. We have a cadre of volunteer students who have auditioned as readers of books for our State collection. Our current Library has wide aisles and adequate space for wheelchairs between the stacks and of course, these features will be the same in our new Library. Students are aided by library personnel or other students if books are shelved out of reach.

An additional aspect of academic services is our physical education program. Assistant Professor David Turnage has initiated an innovative program to keep our handicapped students physically active. He offers a one-credit course for students with temporary or permanent physical limitations to help them develop recreational skills as well as fitness. Students use the weight room, gymnastic apparatus, wrestling mats, parallel bars, and the swimming pool. The swimming pool is equipped with a lift, so students can be taken from their wheelchairs, put in the sling, and lowered into the water. Dave's work with the blind student has been so successful that the student dove off the one meter board, jumped off the three meter board and swam several lengths, in order to kick off our 24-hour Swim-a-thon. With the monies realized from this event, Dave will be able to expand and enrich a program which is already very strong.

Job Placement and Graduate School

We have been extremely pleased to have two handicapped women in their senior year move on to employment with local divisions of IBM. They began work in January and are completing their degrees at our Saturday College. One of the women was managing editor of the College newspaper for a year. Both women come to social events at the College and one attended a meeting of handicapped students when we were discussing job opportunities. They are aware of the important role they play in the business world since they not only represent the College and other women, but also the handicapped students who succeed them. Another of our seniors is going to a local university to complete Master's level studies in business. Handicapped students use the same channels for job placement and graduate school as the other students. With recent affirmative action legislation including the handicapped, they should continue to have success after graduation.

Comments Regarding Costs

In a recent cost estimate published by the Office of Civil Rights, it was indicated that it would take between $198 and $432 million to make all college and university buildings accessible to handicapped students, depending on the rate at which inflation continues to impact on construction costs. According to a comment in the May 24, 1976 edition of the bi-weekly newsletter EQUAL OPPORTUNITY IN HIGHER EDUCATION, the cost estimate also suggests that flexibility in meeting accessibility requirements of the law would reduce the real cost of building modification down to perhaps $65-$142 million.

Just how realistic the Office of Civil Rights estimate may be remains to be seen. In our view, however, these estimates could be well below the cost of providing more than an absolute minimum level of service for our handicapped students. Even at Ramapo, where we started with a clean slate and a determination to erect a barrier-free campus, we face costs such as the following to make minor improvements to our facilities, and we are determined to compiete these projects this year before inflation raises the costs even higher.

1. Installation of a ramp and automatic door to the Mansion-$14,000
2. Construct level walkway from housing to campus center - $24,000
3. Installation cost for seven automatic doors, including alterations - $26,000

The problems at older campuses are much more expensive to correct. For example, some early 1960 work involved in modifying a series of buildings at the University of Missouri at Columbia absorbed a major part of almost a million dollars made available to the University via grants and matching funds over the period 1960-1966. The amount of $335,000 was spent on elevators, $78,000 on ramps and $10,000 on modifying public toilet facilities. Bearing in mind the higher level of service that handicapped students are coming to demand nowadays, we can only urge everyone involved in creating barrier-free facilities

to be prepared for substantial expenditures as they start to put their plans into effect.

Although the Office of Civil Rights has estimated these major costs for modifying college and university facilities, they have dismissed as "negligible" the other costs that higher education would have to pay to meet the rules that will be promulgated under Section 504 of the Rehabilitation Act. We cannot support this assumption and we need only point to the fact that we are currently seeking a grant of $70,000 to add to our operating budget to meet the urgent needs of just 40-50 students to dramatize our position. We cannot expect to operate these programs on a shoe-string, and we must provide adequate funding if we are to provide an adequate service for our students.

Additional Information

Printed versions of this paper will include a select bibliography and a copy of an architectural checklist on Making Colleges and Universities Accessible to Handicapped Students, published by the New York State University Construction Fund, Albany, New York, 12210, and reprinted by the President's Committee on Employment of the Handicapped, Washington, D.C. 20210.

Administrators, planners and architects interested in obtaining further information about the development and operation of barrier-free campuses, should be on the look-out for a Directory of Programs for Disabled Students that is soon to be published by Abt. Associates, Inc. of Cambridge, Massachusetts, as an outcome of a Federally funded Higher Education Accessibility Project. The Director of this project has been John F. Doucette of Abt. Associates. Project Officer for the United States Office of Education has been Mr. Melville Appell, and a top level Committee has given direction to the project, including representatives of national associations for the handicapped and such leaders in the field of

college and university programs for the handicapped as Dr. Theodore Childs from Long Island University, Brooklyn Centre and Dr. Timothy Nugent of the University of Illinois, Champaign, Urbana.

A major part of this project was the administration of a questionnaire to collect information for the directory listings. The questionnaire, which extended to 25 pages plus special reports on all classroom and laboratory buildings, student residences, and other buildings and facilities, encompassed every aspect of college programs for the handicapped. We found that the mere fact of completing the questionnaire brought to light new aspects of the rights and needs of handicapped students. So, we shall review the Directory with unusual interest when it becomes available.

Concluding Comments

There will always be some inadequacies in design and service. Even though one works very hard to plan and design a facility to meet the general needs of the handicapped, handicapped people have individual and unique requirements. Each person's disability requires a specific environment, physical and psychological, which cannot be universally met. We must be diligent, aware, informed by our students as to their needs, creative in solving problems, but we should not allow ourselves to be inundated by feelings of frustration because we haven't met all their needs. They will work together with us to overcome the problems; we must let them speak and we must listen.

1 June, 1976
Ramapo College of New Jersey
Mahwah, New Jersey
07430

SELECT BIBLIOGRAPHY

1. A Laboratory Campus for the Handicapped. Cyros, Kreon L., and Simha, O. Robert Planning for Higher Education, Vol. 4, No. 1:2/4, Society for College and University Planning, 3 Washington Square Village, Suite 1-A, New York, New York, 10012. Published in cooperation with Educational Facilities Laboratories, 850 Third Avenue, New York, New York 10022.

2. American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, The Physically Handicapped. American Standards Association, Inc., 10 East 40 Street, New York, New York, October 31, 1961.

3. Design of Buildings to Permit Their Use by the Physically Handicapped. Nugent, Timothy J., New Building Research, Fall 1960.

4. Guiding the Physically Handicapped College Student. Rusalem, Herbert. Teachers College, Columbia University, New York, 1962.

5. Handbook for Self-Evaluation of Programs and Services to the Disadvantaged and the Handicapped at Community Colleges under the Vocational Education Amendments of 1968 (Public Law 90-576). Tadlock Associated, Los Altos, California, 15 April 1972.

6. Handbook for the Disabled Students of Brooklyn College C.U.N.Y. Fredrick L. Francis, Student Organization for Every Disability United for Progress, Brooklyn, New York, 1971.

7. Higher Education and the Physically Handicapped. McBee, M. Louise, and Cox, John L., National Association of Student Personnel Administrators Journal, Fall 1974

8. Making Colleges and Universities Accessible to Handicapped Students. An Architectural Checklist. New York State University Construction Fund, Albany, New York, 12210. Reprinted by the President's Committee on the Employment of the Handicapped, Washington, D.C. 20210.

9. Preparing Higher Education Facilities for Handicapped Students. McGowan, John F., Gust, Tim, Missouri University, Columbia, February 1968.

10. Supplement to Handbook for Self-Evaluation of Programs and Services to the Disadvantaged and the Handicapped at Community Colleges Under the Vocational Education Amendments of 1968 (Public Law 90-576). Tadlock Associates, Los Altos, California, 15 April 1972.